

CLAIMS

1. Process for preparing a mercaptan from an olefin and hydrogen sulphide, characterized in that it is carried out in the presence of hydrogen and a catalyst composition comprising a strong acid and at least one metal belonging to group VIII of the Periodic Table.
2. Process according to Claim 1, characterized in that the strong acid is selected from the group consisting of:
 - (a) one or more heteropolyacids selected from:
 - (i) a compound of formula: $\text{H}_3\text{PW}_{12}\text{O}_{40} \cdot n\text{H}_2\text{O}$, $\text{H}_4\text{SiW}_{12}\text{O}_{40} \cdot n\text{H}_2\text{O}$ or $\text{H}_6\text{P}_2\text{W}_{18}\text{O}_{62} \cdot n\text{H}_2\text{O}$, in which n is an integer representing the number of molecules of water of crystallization, and is between 0 and 30, preferably between 6 and 20;
 - (ii) a potassium, rubidium, caesium or ammonium salt of at least one compound (i), or a mixture of such salts;
 - (b) a sulphated zirconium oxide,
 - (c) a tungstic zirconium oxide,
 - (d) a zeolite, and
 - (e) a cationic resin.
3. Process according to Claim 2, characterized in that the strong acid is a heteropolyacid (ii), or one of the compounds (b), (c), (d) or (e).
4. Process according to Claim 3, characterized in that the catalyst composition comprises:
 - from 90% to 99.9%, preferably from 98.5% to 99.5%, by weight of strong acid, and
 - from 0.01% to 10%, preferably from 0.05% to 1.5%, by weight of metal from group VIII.
5. Process according to Claim 2, characterized in that the strong acid is a heteropolyacid (i).

6. Process according to Claim 5, characterized in that the catalyst composition comprises:

- from 10% to 60%, preferably from 25 to 50%, by weight of strong acid,

- from 0.01% to 10%, preferably from 0.1% to 2%, by weight of metal from group VIII, and

- from 30% to 80%, preferably from 48% to 75%, by weight of a support selected from silica SiO₂, alumina Al₂O₃, titanium dioxide TiO₂, zirconium oxide ZrO₂, and activated carbon.

7. Process according to either of Claims 5 and 6, characterized in that the strong acid is 12-phosphotungstic acid, preferably impregnated on silica.

8. Process according to one of Claims 1 to 7, characterized in that the metal is selected from iron, cobalt, nickel, ruthenium, rhodium, palladium, osmium, iridium, and platinum.

9. Process according to one of Claims 1 to 8, characterized in that the metal is selected from palladium, ruthenium, and platinum.

10. Process according to one of Claims 1 to 9, characterized in that the metal is platinum.

11. Process according to one of Claims 1 and 5 to 10, characterized in that the catalyst composition comprises approximately 40% by weight of 12-phosphotungstic acid, 1% of platinum and 59% of silica.

12. Process according to one of Claims 1 to 11, characterized in that the hydrogen is introduced in an amount corresponding to a molar H₂S/H₂ ratio of between 0.05 and 200, preferably between 0.1 and 100.

13. Process according to one of Claims 1 to 12, characterized in that the olefin used has the general formula:



in which R_1 , R_2 , R_3 , R_4 , which are identical or different, represent a hydrogen atom or a linear or branched alkyl radical of 1 to 20 carbon atoms, preferably 1 to 12 carbon atoms.

14. Process according to one of Claims 1 to 13, characterized in that the olefin used is ethylene.

15. Process according to one of Claims 1 to 14, characterized in that the hydrogen sulphide is introduced in an amount corresponding to a molar H_2S /olefin ratio of between 1 and 100, preferably between 2 and 30, more preferably between 4 and 12.